5: Dobby K-4 (no date) 1950 ALI Southeast Asia ALI

groups resemble those of salt-tolerant vegetation on European beaches of which spinifex is a sample. Behind this shore grows a distinctive strip of what may be called *beach woodland*, sometimes referred to as beach forest. On reefs, on muddy shores and estuaries, where there is diurnal flooding at high tide, the *mangrove* forest develops. When the shore is rocky, lowland forest may reach high tide mark. In this vegetation seeds and fruit are waterborne so that currents are an important means of dispersion.

Well-developed beach woodland forms as a ribbon rarely more than 200 ft. inland from the shore and contains tree types not usually seen elsewhere and often reaching 90 ft. in height. The typical tree, the casuarina (Equisetifolia, rhu, ru, tjemara) is rather like a conifer to look at and is related to Australian she-oaks. Sometimes the casuarina is in pure stands; at places the strip includes screw pines (Pandanus), the leathery-leaved Calophyllum, Inophyllum and Barringtonia. Coconut palms, which can take root after nuts have been dispersed by sea-currents, are now prominent in beach woodland areas as a planted crop, but they occur self-sown everywhere through the islands.

Mangrove forests are widely distributed on sedimenting shores throughout Southeast Asia. The fringe of mangroves is interrupted where rocks or cliffs come to the sea and when drainage control has diminished the silt from terrestrial sources. Where mangroves develop, silt is being deposited at a fast rate (sometimes to a thickness of 1½ in. annually); the mangrove thus both raises the surface level and progressively presses farther seaward. Whether mangroves grow only where silt is being deposited or whether they cause silt deposition by their root system, obstructing tidal currents and flood run-off, is still disputed. Possibly both processes operate together. The net effect is one of raising the land level and reclaiming land from the sea. In addition, the wood of mangroves is valued for firewood and charcoal; the bark is sold extensively for tanning. The mangrove trees are of some thirty species, all with structural adaptations enabling them to root in unstable muds and to tolerate daily inundation of their root system by saline tidal water. In addition to the tree, there are shrubs, herbaceous plants and ferns (particularly Aerostichum aureum). The trees are evergreen, sometimes 100 ft. tall, mostly with shining, leather-like leaves, small flowers, and unusual root systems. Some (as Rhizophora) have many roots supporting the trunk which begins well